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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C.

JAN - 8 1993

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of

Amendment of the Commission's Rules to  
Establish New Personal Communications  
Services

)  
)  
) General Docket No.  
) 90-314  
) ET Docket No.  
) 92-100

To: The Commission

REPLY COMMENTS OF ROCKY MOUNTAIN TELECOMMUNICATIONS ASSOCIATION

John A. Prendergast  
Its Attorney

Blooston, Mordkofsky, Jackson & Dickens  
2120 L Street, N.W.  
Washington, DC 20037

Dated: January 8, 1993

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**SUMMARY**

Rocky Mountain Telecommunications Association (RMTA) agrees with those commenters proposing unrestricted eligibility for local exchange carriers (LECs) who wish to provide personal communications services (PCS). PCS is a natural extension of local exchange service, and LECs have the resources, personnel, expertise and dedication to providing communication services to their certificated areas such that they are in the best position to develop PCS as an exchange service. The Commission's concerns about anti-competitive practices are misplaced, since LECs no longer have a monopoly on the infrastructure needed to provide PCS-type services. Moreover, various safeguards developed in connection with the provision of cellular service should prevent any abusive practices.

Moreover, the Commission should set aside a 25 MHz block of PCS spectrum for wireline use. Since PCS will potentially replace wireline exchange service, it is imperative that exchange carriers be allowed to transition to this technological development, for the reasons cited above, and to ensure their continued financial viability. Merely removing restrictions on wireline eligibility will only give LECs an opportunity to participate in a lottery drawing. The public interest mandates that one of the four or five spectrum blocks to be allocated to PCS be reserved for exchange carrier use within their certificated service area, along the lines

proposed by the National Telephone Cooperative Association (NTCA).

Finally, RMTA urges the Commission to adopt criteria for interference protection to existing fixed 2 GHz users which take into consideration the unusual circumstances faced by rural telephone carriers, including mountainous terrain and/or the need to utilize very long microwave paths. The proposed coordination rules include assumptions about the antenna height and power of PCS operations, versus the antenna height of fixed users, which may not be suitable in rural areas.

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REPLY COMMENTS OF  
ROCKY MOUNTAIN TELECOMMUNICATIONS ASSOCIATION

Rocky Mountain Telecommunications Associations (RMTA) hereby submits its Reply Comments in response to the Commission's Notice of Proposed Rulemaking and Tentative Decision, General Docket No. 90-314, 7 FCC Rcd. 5676 (released August 14, 1992) (hereinafter "NPRM"). RMTA agrees with those commenters proposing unrestricted eligibility of local exchange carriers (LECs) for Personal Communications Service (PCS) licenses. LECs should be able to apply for PCS licenses within or without their certificated service area, without regard to whether they hold an interest in a cellular license. Indeed, the Commission should set aside a block of PCS spectrum for wireline carriers. RMTA also requests that the Commission clarify the proposed interference protection standards for 2 GHz licensees, to take into account existing 2 GHz microwave operations utilized by LECs in rural, mountainous regions of the country.

In support of these Reply Comments, the following is shown:

**I. LECs SHOULD BE ELIGIBLE FOR PCS LICENSES**

Several commenters in this proceeding very ably demonstrate that there are compelling reasons to allow LECs to hold PCS licenses within their certificated area, even if they hold an interest in a cellular system serving that same area. See Comments of US West, Inc. (US West); Joint Comments of the National Rural Telecom Association and the Organization for the Protection and Advancement of Small Telephone Companies (hereinafter OPASTCO); Comments of the United States Telephone Association (USTA). RMTA hereby voices its strong agreement with these commenters that it would be adverse to the public interest to prevent LECs from providing Personal Communications Services within their certificated areas.

PCS is a natural extension of local exchange service, and may some day constitute the technology whereby all exchange service is provided. It would be non-sensical to exclude from this transition the very companies that have the resources, institutional experience, and expert personnel to develop the most effective way of providing exchange service through this new technology. Indeed, for the thousands of small communities served by telephone cooperatives, the exclusion of exchange carriers from PCS would prevent the

members of these communities from having a say in what new services will be provided, and how. In rural communities and elsewhere, LECs have the infrastructure in place that will allow economies of scale to be realized in providing PCS, thereby making possible personal communications services that might not otherwise be economically viable.

Indeed, the Commission recognizes these factors in concluding that "there is a strong case for allowing LECs to provide PCS within their respective service areas." See NPRM at paragraph 75. The Commission's concerns that LECs may have incentives to discriminate against PCS competitors requesting interconnection, or to cross-subsidize their own PCS operations, carry little weight against these compelling reasons for allowing LECs into PCS. These same anti-competitive concerns were raised with regard to LECs holding cellular licenses, and these potential abuses have been successfully controlled through various safeguards. Indeed, the Commission initially feared that these potential abuses would be exacerbated by the ability of wireline carriers to place a cellular system into operation before their non-wireline counterpart, giving rise to the "headstart" doctrine. However, the Commission has recently done away with this policy, upon finding that there has never been a showing that a wireline carrier gained an undue competitive advantage through its headstart into the market. See First Report and

Order and Memorandum Opinion and Order on Reconsideration, Docket Nos. 90-6 and 85-388, 6 FCC Rcd 6185, 6225-26 (1991). And as US West correctly notes, telephone companies are no longer the only available providers of the infrastructure needed for PCS services. Cable operators and other entities have created competition in this area, such that telephone companies no longer hold a monopoly position.

Likewise, the Commission's proposed ban on the issuance of PCS licenses to any entity holding an interest in a cellular license should not be applied to LECs. As the Commission recognizes (NPRM at paragraph 63), cellular and PCS will not necessarily be in direct competition, and are not fungible services. Cellular service is designed to provide primarily a mobile telephone service, while PCS will be able to provide numerous types of services in various environments, fixed and mobile.<sup>1</sup> Moreover, a LEC often has only a minority

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<sup>1</sup> One of the key features of PCS is the use of "microcell" technology, whereby frequency reuse can be accomplished at such short distances that extremely low-powered, inexpensive equipment can be utilized. This feature is supposed to allow the proliferation of "pocket phones" to be used on a wide spread basis by consumers that would not see fit to purchase the more expensive cellular service. The record in this proceeding contains indications that frequencies below 1,700 MHz (which would include the cellular channels) are not suitable for this microcell technology, because these frequencies propagate too far. See Notice of Inquiry, 5 FCC Rcd. 3995, 3997 (1990). Thus, even if the rules for provision of enhanced services on cellular systems are liberalized as proposed in the NPRM, cellular systems may not be able to provide the inexpensive, consumer oriented services which are supposed to be a by-product of microcell technology.



interest in the wireline cellular system serving the MSA or RSA in which its certificated exchange service area is located. The LEC's certificated area may or may not be within the cellular system's coverage. And the individual LEC often has little say in what services and/or coverages are to be offered on a cellular system. Therefore, the Commission's anticompetitive concerns are misplaced with regard to LECs that may have cellular interests. In any event, with four or five PCS licensees potentially being authorized in a single market, there is a far slighter chance of anti-competitive practices by a PCS licensee holding an interest in a cellular system than is found in the provision of cellular service, where there are only two licensees in a market.

**II. THE COMMISSION SHOULD SET ASIDE A 25 MHZ BLOCK OF PCS SPECTRUM FOR WIRELINE CARRIERS**

As demonstrated above, and in several comments filed in this proceeding, there are no compelling reasons to exclude LECs from being PCS licensees in their service areas. At a minimum, the Commission should impose no eligibility restrictions on LECs. However, there are compelling reasons for the Commission to go a step further, by setting aside a portion of the emerging technologies band to be licensed to LECs only. As discussed above, while PCS may encompass many different communication services, one of the most significant potential uses is the provision of exchange service. It is hoped that PCS will one day bring about a "one person, one

telephone number" capability, rather than the current station-to-station limitation. LECs are in the best position to focus on this aspect of PCS.

In this regard, US West astutely observes that there is a need for interoperability standards, to allow consumers to utilize their PCS handsets with equal effectiveness throughout the country. See US West Comments at pages 18-20. Not all PCS licensees will necessarily concern themselves with this problem, especially those who are designing systems for the provision of specialized data services. However, LECs will have a vested interest in ensuring interoperability, just as they have done with the public switched telephone network.

While the Commission has not shown an inclination towards a wireline set-aside for PCS (See e.g., NPRM at paragraph 79), the public interest would be served by such set-aside. PCS is likely to supplement, and eventually replace, traditional wireline service. Not only are LECs in the best position to expedite such service to the public, but the inability of LECs to provide this service could threaten their financial viability in the long run, to the detriment of the public. While ensuring that LECs will be eligible to apply for PCS licenses in the future would be a step in the right direction, it only ensures them the ability to participate in a lottery - leaving to chance whether they will be authorized. And this

chance may be quite remote in those parts of the country that are likely to be the subject of numerous PCS applications. Therefore, the Commission should set one block of spectrum aside for LECs. In this regard, RMTA supports the comments submitted by the National Telephone Cooperative Association (NTCA) in this proceeding.<sup>2</sup>

The Commission and commenters have proposed creating four or five blocks of spectrum, so as to allow multiple PCS licensees in the same market. See, e.g., Comments of US West and OPASTCO. While the Commission and various commenters propose issuing licenses on an MSA/RSA basis, or by other geographic regions, the wireline set-aside would be available for licensing to each and every exchange carrier within its certificated service area. This would avoid the need for lotteries, hearings, or auctions for this block of spectrum, since there would be only one exchange carrier in a given area. This scheme would have the benefit of speeding PCS to the public.

This approach was used in part by the Commission in issuing cellular licenses, in recognition of the fact that

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<sup>2</sup> RMTA also supports the Comments of the United States Telephone Association (USTA) in this docket. USTA proposes that wireline carriers be licensed in rural areas. RMTA agrees with this proposal, but would expand its scope to provide for licensing of wireline carriers in both rural and urban areas, as discussed herein.

wireline carriers were in the best position to expedite service to the public, by utilizing their experience and resources to construct and become operational in the shortest amount of time. See First Report and Order, CC Docket No. 79-318, 86 FCC 2d 469, 489-90 (1981); Memorandum Opinion and Order for Reconsideration, 89 FCC 2d 58, 69-70 (1982). LECs would be free to negotiate with each other, so as to establish a single system serving an entire MSA or RSA. However, communities that could economically be served by a single, small PCS system could promptly receive service from their local exchange carrier, without the delay of a lottery, auction or hearing process. In the event that the local exchange carrier did not pursue a PCS license within a certain period of time (e.g., five years), the wireline set-aside could become available for application by other entities, as the Commission saw fit.

The proposed wireline set-aside should not adversely affect either the availability of PCS spectrum or the competitive environment. As discussed above, adequate spectrum has been allocated to accommodate four to five licensees in a given market. Even if one of these frequency blocks is dedicated to regional PCS as proposed in various

comments,<sup>3</sup> there would still be two or three frequency blocks available for entities other than the exchange carrier.

**III. THE COMMISSION SHOULD ADOPT INTERFERENCE CRITERIA WHICH WILL TAKE INTO CONSIDERATION EXISTING 2 GHZ LICENSEES IN REMOTE REGIONS**

As described in RMTA's June 5, 1992 Comments in ET Docket No. 92-9, RMTA is a telecommunications association made up of telephone companies providing services throughout the Rocky Mountain Region of the United States, including the states of Arizona, Colorado, Idaho, Montana, New Mexico, Utah and Wyoming. Because of the rugged terrain in many portions of the Rocky Mountain Region, and because the population is generally scattered and sparse, the costs of providing service are significantly higher than in urban areas, and the use of 2 GHz microwave paths can constitute the only economically feasible means of providing service. Many RMTA members must use significantly long microwave paths (some being over 50 or 60 miles in length) in order to bridge the gaps created by mountainous or other difficult terrain. Thus, RMTA advocated in ET Docket No. 92-9 that the Commission give special consideration to existing 2 GHz licensees utilizing this band for long hops in rural areas. RMTA also urged the Commission to require PCS licensees to pay for all costs associated with

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<sup>3</sup> See, e.g., Comments of US West at pages 12-15, wherein it proposes that one frequency block be set aside for licensing by "Major Trading Areas." RMTA supports this proposal.

relocating to a new band, and demonstrate to the existing 2 GHz licensee that the new system to which it is being relocated will provide service that is as reliable as the existing system, if not better. See RMTA Comments at pages 14-17.

The Commission has adopted some of these safeguards suggested by RMTA, in its First Report and Order and Third Notice of Proposed Rulemaking in ET Docket No. 92-9, Mimeo No. FCC 92-437, released October 16, 1992. PCS licensees must "guarantee payment of all relocation costs." Id. at paragraph 24. The PCS licensee must also test the new system for comparability to the existing 2 GHz system, and the existing licensee would not be required to relocate until it has been assured that comparable alternative facilities are available, so as to allow a "seamless hand-off." Id. RMTA applauds the adoption of these measures by the Commission. However, the Commission has solicited comments on how to define "comparable alternative facilities." Id. at paragraph 25. RMTA urges the Commission to take into account this outstanding issue, and the unusual circumstances faced by rural carriers, when defining the standards for protection of existing 2 GHz licensees in this proceeding.

The NPRM proposes coordination distances and other protections to existing 2 GHz licensees, based upon an

assumption that PCS licensees will utilize relatively low power base stations, with antennae relatively close to the ground. See NPRM at paragraph 115. And while the Commission recognizes that, in large, sparsely populated areas, there may be a demand for higher powered PCS systems, the increased protection it would afford under these circumstances may fall short in mountainous areas. In particular, the Commission assumes that "a typical microwave receiver [will have] a site of up to 1,000 meters (3280 feet) above average terrain," in determining the required coordination distances. However, as demonstrated in the attached engineering study (Exhibit 1 hereto), in mountainous areas such as those served by RMTA's members, it is quite possible to have microwave receivers with a site well over 1,000 meters above average terrain. Under the proposed standard, these existing licensees would not receive notice of a proposed PCS operation that may fall outside of the coordination distances set forth in NPRM, and yet be close enough to adversely affect the existing operation. Exhibit 1 also shows that there may be instances where a fixed user with a site under 1,000 meters may still have a line of sight to a PCS system which is located beyond the maximum coordination distance (and thus will be subject to interference).

RMTA strongly urges the Commission to recognize the unusual circumstances present in mountainous regions, and to

adopt further safeguards that would require the notification and protection of licensees who rely on 2 GHz hops in order to bring service to their rural subscribers. If these licensees do not find out about a PCS operation until after they are receiving interference, the substantial investment in time and resources in constructing the PCS system will confound any attempt at resolving the interference problem. At a minimum, PCS applicants should be required to coordinate with any fixed 2 GHz operation with which there is line-of-sight. See Exhibit 1.

Likewise, it is not clear that the Commission proposed standard will adequately protect long microwave hops utilized in rural areas, which may or may not be located in mountainous terrain. Such long hops may be the only cost-effective means of hauling traffic in lightly populated areas, and are likely to be more subject to interference and signal attenuation because of the distance between receivers. Again, the Commission should ensure that these carriers receive adequate notice of proposed PCS operations during the coordination process, and are adequately protected. The Commission may want to revisit this issue in the future, once it has experience with PCS operations operating near fixed 2 GHz stations under the proposed standard.



Moreover, before a definitive standard can be adopted for protection to existing licensees, it is respectfully submitted that the Commission should resolve the outstanding issue in ET Docket No. 92-9 concerning the definition of "comparable alternative facilities." This definition is intertwined with issues surrounding the interference protection standard, since any definition of comparability must include reference to the level of interference protection to which the existing systems are entitled. RMTA urges that existing 2 GHz licensees should be entitled to such protection as will ensure the uninterrupted provision of their services, especially in rural areas where communities are dependent upon microwave paths as their link to emergency services.

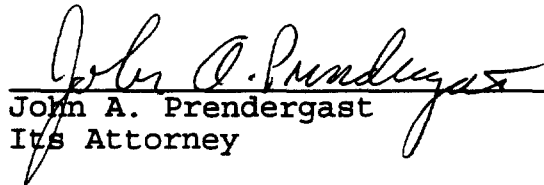
**CONCLUSION**

In light of the foregoing, RMTA respectfully submits that the Commission should ensure wireline eligibility for PCS licensees, and should create a wireline set-aside. It also urges that the Commission clarify its interference protection standards to take into account existing licensees in rural and/or mountainous regions.

Respectfully submitted,

**ROCKY MOUNTAIN TELECOMMUNICATIONS  
ASSOCIATION**

By:

  
John A. Prendergast  
Its Attorney

Blooston, Mordkofsky, Jackson  
and Dickens  
2120 L Street, N.W.  
Suite 300  
Washington, D.C. 20037

Dated: January 8, 1993

ENGINEERING REPORT

Exhibit 1

**LAW OFFICES OF BLOOSTON, MORDKOFKY, JACKSON & DICKENS**

DARRYL K. DELAWDER

CONSULTING ENGINEER

(202) 659-0830

Rocky Mountain Telecommunications Association

I have been retained by the Rocky Mountain Telecommunications Association (RMTA) to evaluate the Federal Communications Commission's proposed standards for protection of fixed 2 GHz Point-to-Point Microwave Radio Service operations from interference caused by personal communications service (PCS) systems, as described in the Commission's Notice of Proposed Rulemaking and Tentative Decision, General Docket No. 90-314, 7 FCC Rcd. 5676 (released August 14, 1992). The Commission proposes that PCS licensees engage in frequency coordination with existing fixed users, and has formulated a table of distances versus power, to allow PCS licensees to determine which fixed users are to be included in the coordination process. The Commission assumes, in determining these coordination distances, that "a typical microwave receiver [will have] a site of up to 1000 meters (3280 feet) above average terrain."

The Commission's assumption of a typical microwave receiver site of up to 1000 meters (3280 feet) above average terrain may not be typical when considering microwave hops through the Rocky Mountain region. Exhibits ENG-1 through ENG-3 are instances where the average antenna heights

## ENGINEERING REPORT

### LAW OFFICES OF BLOOSTON, MORDKOFKY, JACKSON & DICKENS

DARRYL K. DELAWDER

CONSULTING ENGINEER

(202) 659-0830

#### Rocky Mountain Telecommunications Association

(assuming 100 foot centerlines) at these selected sites would be well above the assumed 1000 meters (3280 feet). In the instance of Mount Evans, the average antenna height (assuming 100 foot centerline) is 1555 meters (5101 feet). In the absence of knowing the type of microwave dish, gain, tilt or exact orientation, etc., it would be difficult to determine whether a site of this nature would be susceptible to potential interference over the maximum coordination distance of 125 miles from the proposed PCS operation. However, interference is certainly possible. Yet, the fixed users would not be included in the coordination process under the proposed criteria.

Exhibits ENG-4 and ENG-5 demonstrate that certain sites in the Rocky Mountains would not only have average antenna heights of more than 1000 meters, but would also have an unobstructed line-of-site path to potential PCS transmitters more than 125 miles away (assuming the PCS system has an average antenna height of 90 meters (295 feet)). Furthermore, even where the average antenna height would be less than 1000 meters (see Exhibit ENG-6), it is possible to have an unobstructed line-of-site path, as demonstrated in Exhibit ENG-5. Therefore, it may be necessary for the Federal Communications Commission to adopt

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DARRYL K. DELAWDER

CONSULTING ENGINEER

(202) 659-0830

---

Rocky Mountain Telecommunications Association

coordination standards which would require PSC providers to coordinate with any 2 GHz band microwave user to which it has an unobstructed line-of-site path. This would require greater coordination distances in the separation table than currently proposed.

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DARRYL K. DELAWDER

CONSULTING ENGINEER

(202) 659-0830

Rocky Mountain Telecommunications Association

Exhibit ENG-1

### EIGHT RADIAL AVERAGE TERRAIN ELEVATION REPORT

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#### SITE DATA SUMMARY

Site Name: Lowe Peak  
Latitude: 40° 25' 32" North  
Longitude: 112° 19' 43" West  
Site Elevation: 10,589 feet  
Antenna Centerline Height: 100 feet

\*\*\*\*\*

#### AVERAGE TERRAIN AND ANTENNA HEIGHT SUMMARY

<u>Radial</u> <u>Bearing</u> (Degrees)	<u>Average</u> <u>Terrain Elevation</u>		<u>Average</u> <u>Antenna Height</u>	
	(Feet)	(Meters)	(Feet)	(Meters)
0	5213	1589	5476	1669
45	7340	2237	3349	1021
90	7936	2419	2753	839
135	7649	2331	3040	927
180	5328	1624	5361	1634
225	5114	1559	5575	1699
270	5271	1606	5418	1651
315	5047	1538	5642	1720
Average	6112	1863	4577	1395

\*\*\*\*\*

Derived from U.S.G.S. 3-ARC  
SECOND TERRAIN DATA

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DARRYL K. DELAWDER

CONSULTING ENGINEER

(202) 659-0830

Rocky Mountain Telecommunications Association

Exhibit ENG-2

### EIGHT RADIAL AVERAGE TERRAIN ELEVATION REPORT

\*\*\*\*\*

#### SITE DATA SUMMARY

Site Name: Honeyville  
Latitude: 41° 38' 08" North  
Longitude: 112° 00' 50" West  
Site Elevation: 9,372 feet  
Antenna Centerline Height: 100 feet

\*\*\*\*\*

#### AVERAGE TERRAIN AND ANTENNA HEIGHT SUMMARY

<u>Radial</u> <u>Bearing</u> (Degrees)	<u>Average</u> <u>Terrain Elevation</u> (Feet)	(Meters)	<u>Average</u> <u>Antenna Height</u> (Feet)	(Meters)
0	5651	1722	3821	1165
45	4643	1415	4829	1472
90	4749	1448	4723	1440
135	5595	1705	3877	1182
180	5136	1566	4336	1322
225	4323	1318	5149	1569
270	4350	1326	5122	1561
315	4594	1400	4878	1487
Average	4880	1487	4592	1400

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## LAW OFFICES OF BLOOSTON, MORDKOFKY, JACKSON & DICKENS

DARRYL K. DELAWDER

CONSULTING ENGINEER

(202) 659-0830

Rocky Mountain Telecommunications Association

Exhibit ENG-3

### EIGHT RADIAL AVERAGE TERRAIN ELEVATION REPORT

\*\*\*\*\*

#### SITE DATA SUMMARY

Site Name: Mount Evans  
Latitude: 39° 05' 10" North  
Longitude: 105° 38' 45" West  
Site Elevation: 14,264 feet  
Antenna Centerline Height: 100 feet

\*\*\*\*\*

#### AVERAGE TERRAIN AND ANTENNA HEIGHT SUMMARY

<u>Radial</u> <u>Bearing</u> (Degrees)	<u>Average</u> <u>Terrain Elevation</u> (Feet) (Meters)	<u>Average</u> <u>Antenna Height</u> (Feet) (Meters)
0	9315 2839	5049 1539
45	10035 3059	4329 1320
90	9337 2846	5027 1532
135	9131 2783	5233 1595
180	8820 2688	5544 1690
225	8916 2718	5448 1661
270	9170 2795	5194 1583
315	9381 2859	4983 1519
Average	9263 2823	5101 1555

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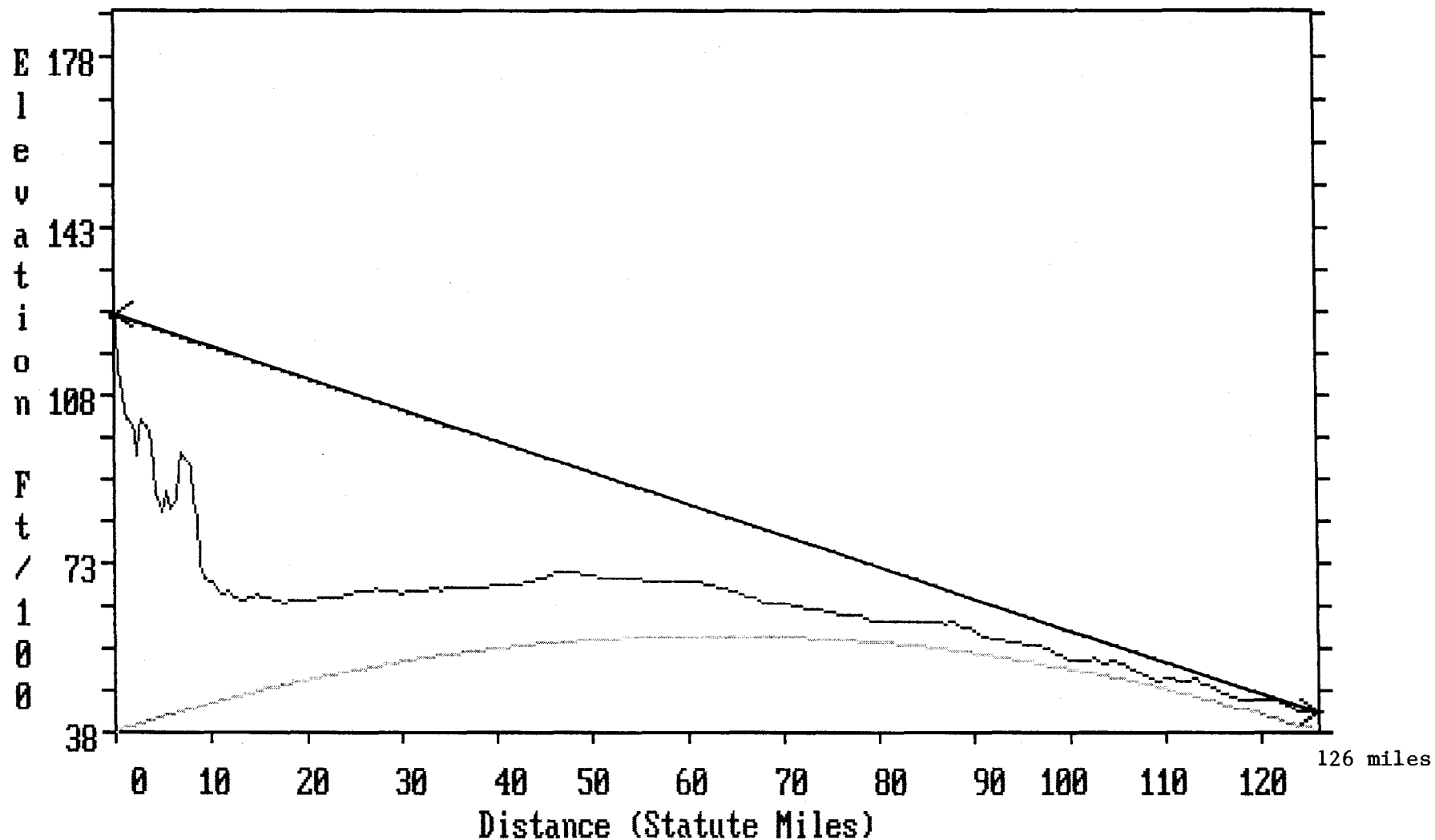


Site: 17

Refractive Index = 301.0

K = 1.33

Site: 24



BLACK MTN

120 DEG BLACK

Derived from U.S.G.S. 3-ARC SECOND TERRAIN DATA